

Saturday 25 April 2020

	8:00	Registration in Foyer Engineering 5 Building		
Workshop Session 1 8:30 - 12:00		2nd Workshop of the IAFSS Working Group on "Measurement and Computation of Fire Phenomena" (the MaCFP Working Group) - Gas Phase Subgroup	Workshop on Large Outdoor Fires & the Built Environment (LOF&BE 2020) <i>What research has been done so far on this problem? Fire safety science community research efforts on Large Outdoor Fires and the Built Environment</i>	Sustainability and Digitalization: How Will It Influence Future Education of Fire Engineers
	8:30 - 12:00	<i>E7-3343</i> Workshop Panelists : Alexander Brown (Sandia National Laboratories, USA) Andres Fuentes (Universidad Técnica Federico Santa Maria, Chile) Michael Gollner (University of Maryland, USA) Anthony Hamins (National Institute of Standards and Technology, USA) John Hewson (Sanda National Laboratories, USA) Naian Liu (University of Science and Technology of China, China) Andre Marshall (University of Maryland, USA) Randy McDermott (National Institute of Standards and Technology, USA) Bart Merci (Ghent University, Belgium) Arnaud Trouvé (University of Maryland, USA) Yi Wang (FM Global, USA) Beth Weckman (University of Waterloo, Canada)	<i>E7-3353</i> Workshop Panelists : Mohamed Beshir (University of Edinburgh, UK) Antonio Cicione (Stellenbosch University, SA) Xinyan Huang (HKPolyU, China) Samuel L. Manzello (NIST, USA, Japan) Sara McAllister (USFS, USA) Sayaka Suzuki (NRIFFD, Japan) Yu Wang (University of Edinburgh)	<i>E5-2004</i> Workshop Organizers : Professor Kathy Notarianni and Dr Nils Johansson
	11:30 - 13:00	Lunch - E5 - 3101, 3102		
Workshop Session 2 13:00 - 17:00		2nd Workshop of the IAFSS Working Group on "Measurement and Computation of Fire Phenomena" (the MaCFP Working Group) - Gas Phase Subgroup	Workshop on Large Outdoor Fires & the Built Environment (LOF&BE 2020) <i>What mechanisms exist to protect communities from large outdoor fire exposures? Overview of codes, standards, and regulatory framework</i>	Fire Safety Challenges with Lithium Ion Batteries
	13:00 - 17:00	<i>E7-3343</i> Workshop Panelists : Alexander Brown (Sandia National Laboratories, USA) Andres Fuentes (Universidad Técnica Federico Santa Maria, Chile) Michael Gollner (University of Maryland, USA) Anthony Hamins (National Institute of Standards and Technology, USA) John Hewson (Sanda National Laboratories, USA) Naian Liu (University of Science and Technology of China, China) Andre Marshall (University of Maryland, USA) Randy McDermott (National Institute of Standards and Technology, USA) Bart Merci (Ghent University, Belgium) Arnaud Trouvé (University of Maryland, USA) Yi Wang (FM Global, USA) Beth Weckman (University of Waterloo, Canada)	<i>E7-3353</i> Workshop Panelists : Faraz Hedayati (IBHS, USA) Samuel L. Manzello (NIST, USA, Japan) Sara McAllister (USFS, USA) Margaret McNamee (Lund University, Sweden) David Rush (UoE, UK) Sayaka Suzuki (NRIFFD, Japan) Maria Theodori (Reax Engineering, USA) Zahir Tohir (Universiti Putra Malaysia)	<i>E5-2004</i> Workshop Organizers : Professor Qingsong Wang and Dr Pravinray Gandhi

Sunday 26 April 2020

	7:30	Registration in Foyer Engineering 5 Building				
Workshop Session 1 8:00 - 12:30		2nd Workshop of the IAFSS Working Group on "Measurement and Computation of Fire Phenomena" (the MaCFP Working Group) - Solid Phase Subgroup 8:00 - 12:30	Workshop on Large Outdoor Fires & the Built Environment (LOF&BE 2020) <i>What knowledge has been garnered from actual large outdoor fires? Lessons learned from real fire events</i> 9:00 - 12:00	Evacuation - Translating Fundamental Research into Engineering 9:00 - 12:00	Compartment Fires: Challenges for Fire Modeling as a Tool for Safe Design 9:00 - 12:00	Timber: What are the Continuing Challenges for Timber Construction from the Viewpoint of Fire Safety? 9:00 - 12:00
		E7-3343	E7-3353	Room TBD	Room TBD	Room TBD
	as noted	Workshop Panelists : Benjamin Batiot (University of Poitiers, France) Morgan Bruns (Virginia Military Institute, USA) Simo Hostikka (Aalto University, Finland) Issac Leventon (National Institute of Standards and Technology, USA) Yuji Nakamura (Toyohashi University of Technology, Japan) Pedro Reszka (Universidad Adolfo Ibáñez, Chile) Thomas Rogaume (University of Poitiers, France) Stanislav Stoliarov (University of Maryland, USA)	Workshop Panelists : Danielle Antonellis (Arup) Antonio Cicione (Stellenbosch University, SA) Samuel L. Manzello (NIST, USA, Japan) Paul Maxim (UFV, Canada) Sara McAllister (USFS, USA) Sayaka Suzuki (NRIFD, Japan) Steven Wong (UC - Berkeley, USA)	Workshop Organizers : Rita Fahy and Daniel Nilsson	Workshop Organizers : Dr. Juan Hidalgo Medina and Dr. Tarek Beji	Workshop Organizers : Professor Ann Jeffers and Dr. Hideki Yoshioka
	12:00 - 13:30	Lunch - E5 - 3101, 3102				
Workshop Session 2 13:00 - 16:00		Fire Safety of Façade Systems - Research Needs?	Smart Firefighting and Fire Protection	Flame Retardants and Toxicity in the Context of Sustainable Fire Safety		
		Room TBD	Room TBD	Room TBD		
		Workshop Organizers : Dr. Susan Lamont and Dr. Eric Guillaume	Workshop Organizers : Casey Grant and Dr. Wolfram Jahn	Workshop Organizers : Professor Margaret McNamee and Dr. Thomas Osimitz		
	16:30- 18:30	IAFSS Executive Committee Meeting Federation Hall Westmount Room				
Evening Events	15:00- 18:30	Registration: Federation Hall, University of Waterloo				
	18:30- 21:30	Welcome Reception Main Hall, Federation Hall, University of Waterloo				

Monday 27 April 2020

	7:30	Registration in Foyer Engineering 5 Building		
	8:30 - 9:00	Opening Ceremony (Room TBD) Session Chair: TBD		
	9:05 - 9:55	Howard W. Emmons Invited Plenary Lecture: Performance of Fluorine-Free vs PFAS-based Firefighting Foams , Bogdan Dlugogorski, Charles Darwin University, Australia Session Chair: TBD		
	10:00 - 10:40	Invited Lecture # 1: The Wildland Fire System and Challenges for Engineering , Mark Finney, USDA Forest Service, USA Session Chair: TBD		
	10:40 - 11:25	Coffee Break Building Foyer		
Morning Session 1 11:25 - 12:40		FIRE DYNAMICS - Room E7-3343 Session Chairs: TBD	FIRE SUPPRESSION - Room E7-3353 Session Chairs: TBD	MATERIAL BEHAVIOR IN FIRES - Room E5-2004 Session Chairs: TBD
	11:25 - 11:50	Chemical Structure of Medium-Scale Liquid Pool Fires , Ryan Falkenstein-Smith, Kunhyuk Sung, Jian Chen and Anthony Hamins, National Institute of Standards and Technology, USA	Development of a Novel Two-Zone Model for the Heating of an Evaporating Liquid Droplet , Martin Thielens, Bart Merci and Tarek Beji, Ghent University, Belgium	Datasets for Material Ignition from High Radiant Flux , Alexander Brown, Jeffrey Engerer, Allen Ricks, Joshua Christian and Julius Yellowhair, Sandia National Labs, USA
	11:50 - 12:15	Temperature Measurement of a Turbulent Buoyant Ethylene Diffusion Flame Using a Dual-thermocouple Technique , Xingyu Ren, Dong Zeng, Yi Wang, Gang Xiong, Gaurav Agarwal and Michael Gollner, FM Global, USA	Development of Solid Propellant for the Production of Fire Suppression Aerosols , Elizabeth Richter and Ulrich Krause, Otto-von-Guericke University Magdeburg, Germany	Flammability of Elementary Sulfur - An Extremely Fire Hazardous Chemical , Zhe Zeng, Ibukun Oluwoye, Mohammednoor Altarawneh and Bogdan Dlugogorski, Charles Darwin University, Australia
	12:15 - 12:40	The Characteristics of a 1 m Methanol Pool Fire , Kunhyuk Sung, Jian Chen, Matthew Bundy and Anthony Hamins, National Institute of Standards and Technology, USA	Evaluation of Automatic Water Cannon for Fire Protection of Low-Piled Storage in High-Clearance Facilities , Xiangyang Zhou, Yibing Xin and Sergey Dorofeev, FM Global, USA	Intumescent Polypropylene in Extreme Fire Conditions , Serge Bourbigot, Johan Sarazin and Tsilla Bensabath, University of Lille, France
	12:40 - 13:45	Lunch - E5 - 3101, 3102		
Afternoon Session 1 13:45 - 15:00		FIRE DYNAMICS - Room E7-3343 Session Chairs: TBD	FIRE SUPPRESSION - Room E7-3353 Session Chairs: TBD	MATERIAL BEHAVIOR IN FIRES - Room E5-2004 Session Chairs: TBD
	13:45 - 14:10	Theoretical and Numerical Study on Influence of Wind on Mass Loss Rates of Heptane Pool Fires at Different Scales , Yongzheng Yao, Ying Zhen Li, Haukur Ingason, Xudong Cheng and Heping Zhang, University of Science and Technology of China, China (Best Thesis Award)	Extinguishing the Dripping Flame by Acoustic Wave , Caiyi Xiong, Yanhui Liu, Cangsu Xue and Xinyan Huang, The Hong Kong Polytechnic University, Hong Kong	Thermal Decomposition of Ammonium Nitrate on Rust Surface: Risk of Low-Temperature Fire , Ibukun Oluwoye, Sara Mosallanejada, Goruck Soubans, Mohammednoor Altarawneh, Jeff Gore and Bogdan Dlugogorski, Charles Darwin University, Australia
	14:10 - 14:35	Why are Cooktop Fires so Hazardous? , Jian Chen, Zhigang Wang, Ki Yong Lee, Sung Chan Kim, Matthew Bundy, Marco Fernandez and Anthony Hamins, NIST, USA	Radiation Impacts of Water-Vapor Addition on Non-Premixed Laminar Flames in Under-Ventilated Conditions , Francisco Cepeda, Rodrigo Demarco, Felipe Escudero, Fengshan Liu and Andres Fuentes, Universidad Tecnica Federico Santa Maria, Chile	Flame Spread Over Polyethylene-Insulated Copper and Stainless-Steel Wires at High Pressure , Yoshinari Kobayashi, Shinji Nakaya, Mitsuhiro Tsue and Shuhei Takahashi, Gifu University, Japan
	14:35 - 15:00	The Burning Rate of a Pool Fire Increased by Bubble Behaviors During Nucleate Boiling , Xiaoyue Pi, Li Chang and Ali Rangwala, Worcester Polytechnic Institute, USA	In-Situ Measurement of Water-Vapor in Fire Environment Using Real-Time Tunable Diode Laser Based Water-Vapor Measurement System , Shruti Ghanekar, Rajavasanth Rajasegar, Nicholas Traina, Constandinos Mitsingas, Richard M. Kesler, Gavin P. Horn, Robin Zevotek, Stephen Kerber and Tonghun Lee, University of Illinois at Urbana-Champaign, USA	Comparison of Pyrolysis Properties of Extruded and Cast Poly(methyl methacrylate) , Gregory Fiola, Dushyant Chaudhari and Stanislav Stoliarov, University of Maryland, USA
	15:00- 15:30	Coffee Break Building Foyer		
Afternoon Session 2 15:30 - 16:45			FIRE SUPPRESSION - Room E7-3353 Session Chairs: TBD	Pyrolysis - Room E5-2004 Session Chairs: TBD
	15:30 - 15:55	A Correction Method for Thermal Disturbances Induced by Thermocouples in a Low-Conductivity Charring Material , Ian Pope, Juan Hidalgo and Jose Torero, The University of Queensland, Australia	Experimental and Numerical Study on the Interaction of a Water Mist Spray with a Turbulent Buoyant Flame , Shogo Noda, Bart Merci, Futoshi Tanaka and Tarek Beji, Ghent University, Belgium	Determination of pyrolysis and combustion properties of poly(vinylidene fluoride) using comprehensive modeling: Relating heat transfer to the intumescent char's porous structure , Joshua Swann and Stanislav Stoliarov, University of Maryland, USA (Best Thesis Award)
	15:55 - 16:20	Applying Large-Scale PIV to Water Monitor Discharge Experiment , Hao-Yu Dai, Masato Hasegawa, Nobuyoshi Kawabata, Miho Seike, Shen-Wen Chien and Tzu-Sheng Shen, Graduate School of Natural Science and Technology, Kanazawa University, Taiwan	Reduced Order Modeling for Fire Sprinkler Sprays , Andres Valencia Correa, Howard R. Baum and André W. Marshall, Department of Fire Protection Engineering, University of Maryland, USA	Validation of Pyrolysis Model in Transient Heating Scenarios and Diverse Spectral Boundary Conditions , Gaurav Agarwal, Marcos Chaos and Yi Wang, FM Global, USA
	16:20 - 16:45	Development of Burn Observation Bubble to capture 360-degree video in flashed over compartment fires and forest fires , Matthew Hoehler, National Institute of Standards and Technology, USA	Experimental Investigation on the Effect of Water Spray on Suppressing Lithium-Ion Battery Fires , Lin Zhang, Qiangling Duan, Yujun Liu, Jiajia Xu, Jinhua Sun, Huahua Xiao and Qingsong Wang, University of Science and Technology of China, China	Simulations of the Unsteady Response of Biomass Burning Particles Exposed to Oscillatory Heat Flux Conditions , Mohamed Ahmed and Arnaud Trouve, University of Maryland, USA
Evening Events	17:00- 19:00	Networking Event for Early Career Researchers - E7 Event space		
	19:00 - 22:00	Optional Oktoberfest Evening , Main Hall, Federation Hall, University of Waterloo		

Tuesday 28 April 2020

	8:00	Registration in Foyer Engineering 5 Building		
Morning Session 1 8:30 - 10:50	8:30 - 9:10	Invited Lecture # 2: <i>Learning from Fire Investigations and Research – from Reactive to Proactive Fire Safety Management</i> , Anne Steen-Hansen, Norwegian University of Science and Technology, Norway Session Chair: TBD		
		RADIATION - Room E7-3343 Session Chairs: TBD	WILDLAND FIRES - Room E7-3353 Session Chairs: TBD	HUMAN BEHAVIOR AND EVACUATION - Room E5-2004 Session Chairs: TBD
	9:30 - 9:55	<i>Radiative Transfer Calculations in Fire Simulations: An Assessment of Different Gray Gas Models Using the Software FDS</i> , Cássio Fernandes, Guilherme Fraga, Francis França and Felipe Centeno, Federal University of Rio Grande do Sul, Brazil	<i>Determination of the Critical Conditions Leading to the Ignition of Decking Slabs by Firebrands</i> , Karina Meerpoel, Virginie Tihay-Felicelli and Paul-Antoine Santoni, University of Corsica, France	<i>Developing and Validating Evacuation Models for Fire Safety Engineering</i> , Enrico Ronchi, Lund University, Sweden (<i>Magnusson Mid Career Award</i>)
	9:55 - 10:25	<i>Measurements and Models to Characterise Flame Radiation from Multi-Scale Kerosene Fires</i> , Giacomo Erez, Anthony Collin, Gilles Parent, Pascal Boulet, Mathieu Suzanne and Aurélien Thiry-Muller, LEMTA, France	<i>Ignition of Wildland Fuels by Idealized Firebrands</i> , Jose Ignacio Rivera, Nicolas Hernandez, Jean-Louis Consalvi, Pedro Reszka and Andres Fuentes, UTFSM, Chile	<i>An Evacuation Model Validation Data-Set for High-Rise Construction Sites</i> , Edwin Galea, Steven Deere, Hui Xie and David Cooney, University of Greenwich, UK
	10:25 - 10:50	<i>Nongray Models for Radiative Absorption and Anisotropic Scattering by Water Droplets in Fire CFD Simulations</i> , Oluwayemisi Oluwole, Ankur Gupta, Bifen Wu, Xinyu Zhao, Karl Meredith and Yi Wang, FM Global, USA	<i>Localized Heat Transfer from Firebrands to Surfaces</i> , Elias Bearinger, Jonathan Hodges, Fengchang Yang, Christian Rippe and Brian Lattimer, Virginia Tech, USA	<i>The Impact of Crowd Composition on Egress Performance</i> , Anna Larsson, Elin Ranudd, Enrico Ronchi, Aoife Hunt and Steven Gwynne, Lund University, Sweden
	10:50-11:25	Coffee Break Building Foyer		
Morning Session 2 11:25 - 12:40		FIRE MODELING - Room E7-3343 Session Chairs: TBD	WILDLAND FIRES - Room E7-3353 Session Chairs: TBD	HUMAN BEHAVIOR AND EVACUATION - Room E5-2004 Session Chairs: TBD
	11:25 - 11:50	<i>Applying the Counterflow Flame Extinction Propensity to the Determination of Flame Extinction in Fire Simulations</i> , Hong-Zeng Yu and Ning Ren, FM Global, USA	<i>Effect of Fuel Bed Size and Moisture on the Flammability of Eucalyptus Saligna Leaves in Cone Calorimeter Testing</i> , Mohamad Lutfi Ramadhan, Sergio Zarate, Jeronimo Carrascal, Andres Osorio and Juan Hidalgo, The University of Queensland, Australia	<i>A Comparative Study on the Bottleneck Pedestrian Flow under Different Movement Motivations</i> , Hongliu Li, Jun Zhang, Weiguo Song and Kwok Kit Richard Yuen, University of Science and Technology of China, China
	11:50 - 12:15	<i>Simulations of the Coupling Between Combustion and Radiation in a Turbulent Line Fire Using an Unsteady Flamelet Model</i> , Rui Xu, Van Minh Le, Alexis Marchand, Salman Verma, Thomas Rogeau, Franck Richard, Jocelyn Luche and Arnaud Trouve, University of Maryland, USA	<i>Effect of Atmospheric Oxygen on the Kinetic Parameters of Thermal Degradation of Pine Branch Particles</i> , Huichang Niu, Naian Liu and Dan Ji, University of Science and Technology of China, China	<i>Effects of Pedestrian Motivation and Opening Shape on Pedestrian Flow Rate at an Opening</i> , Mineko Imanishi, Akhide Jou and Tomonori Sano, Takenaka Research & Development Institute, Japan
	12:15 - 12:40	<i>Grid Insensitive Modelling of Convective Heat Transfer Fluxes in CFD Simulations of Medium-Scale Pool Fires</i> , Georgios Maragkos and Bart Merci, Ghent University, Belgium	<i>The Role of Bulk Properties and in-Bed Structure in the Flow Regime of Buoyancy-Driven Flame Spread in Natural Porous Fuel Beds</i> , Zakary Campbell-Lochrie, Carlos Walker-Ravena, Michael Gallagher, Nicholas Skowronski, Eric V. Mueller and Rory M. Hadden, The University of Edinburgh, UK	<i>Time Gap Distribution of Bus Alighting in Tunnel Fires</i> , Hung-Chieh Chung, Miho Seike, Nobuyoshi Kawabata, Masato Hasegawa, Shen Wen Chien and Tzu-Sheng Shen, Kaohsiung City Fire Bureau, Taiwan
	12:40 – 13:45	Lunch - E5 - 3101, 3102		
	13:45 - 15:30	Poster Session I and Coffee Break Engineering 7 Event Space and Foyer		
Afternoon Session 15:30 - 16:45		FIRE MODELING - Room E7-3343 Session Chairs: TBD	WILDLAND FIRES - Room E7-3353 Session Chairs: TBD	HUMAN BEHAVIOR AND EVACUATION - Room E5-2004 Session Chairs: TBD
	15:30 – 15:55	<i>Numerical Simulations of Soot-Radiation from Buoyant Turbulent Wall-Bounded Diffusion Flames</i> , Prateep Chatterjee and Yi Wang, FM Global, USA	<i>Identifying the criterion for discrete flame spread over single-row birch rods</i> , Rongwei Bu, Long Shi and Yang Zhou, Central South University, China	<i>A Virtual Reality Study of Behavioral Sequences in Residential Fires</i> , Silvia Arias, Daniel Nilsson and Jonathan Wahlqvist, Lund University, Sweden
	15:55 - 16:20	<i>An Urban Dispersion Inspired Scenario for CFD Model Validation</i> , Alexander Brown, Michael Clemenson, Michael Benson, Christopher Elkins and Samuel Jones, Sandia National Labs, USA	<i>Experimental study of fire spread through discontinuous fuels without flame contact</i> , Leo Schneider, Benjamin Betting, Matthew Patterson, Nicholas Skowronski and Albert Simeoni, Worcester Polytechnic Institute, USA	<i>Alone or with Others: Experiments on Evacuation Decision Making</i> , Arturo Cuesta, Orlando Abreu, Adriana Balboa and Daniel Alvear, University of Cantabria, Spain
	16:20 - 16:45	<i>Dynamic Domain Expansion in Smoke Spread Simulations with JuRO: Speedup and Overhead</i> , My Linh Würzburger and Lukas Arnold, Forschungszentrum Jülich GmbH, Germany	<i>Effects of the wind speed and heat release rate on the vortex strength and size of fire whirls with no inner core of flame</i> , Masahiko Shinohara, National Research Institute of Fire and Disaster, Japan	
Evening Events	17:00-19:00	Diversity and Inclusivity Gathering - E7-3343		
	19:00-22:00	Optional Marché Style Dinner (Diverse Menu) - E7 Event Space		

Wednesday 29 April 2020

	8:00	Registration in Foyer Engineering 5 Building		
Morning Session 1 8:30 - 10:50	8:30 - 9:10	Invited Lecture # 3: <i>Evacuation Decision-Making and Behavior in Wildfires: Past Research, Current Challenges, and a Future Research Agenda</i> , Erica Kuligowski, National Institute of Standards and Technology, USA Session Chair: TBD		
		COMPARTMENT FIRE- Room E7-3343 Session Chairs: TBD	WILDLAND FIRES - Room E7-3353 Session Chairs: TBD	HUMAN BEHAVIOR AND EVACUATION - Room E5-2004 Session Chairs: TBD
	9:30 - 9:55	<i>Ventilation Effects on the Thermal Characteristics of Fire Spread Modes in Open-Plan Compartment Fires</i> , Vinny Gupta, Juan Hidalgo, Adam Cowlard, Cecilia Abecassis-Empis, Agustín Majdalani, Jose Torero and Cristian Maluk, The University of Queensland, Australia	<i>Detailed Physical Modeling of Wildland Fire Dynamics at Field Scale - An Experimentally Informed Evaluation</i> , Eric Victor Mueller, Nicholas Skowronski, Kenneth Clark, Michael R. Gallagher, William E. Mell, Albert Simeoni and Rory M. Hadden, University of Edinburgh, UK (Best Thesis Award)	<i>Experimental Study of the Walking Behavior of Crowds Mixed with Slow-Speed Pedestrians, Elderly and Mobility-Impaired Pedestrians</i> , Yoshikazu Minegishi, Takenaka Corporation, Japan
	9:55 - 10:25	<i>Evaluation of a Zone Model for Fire Safety Engineering in Large Spaces</i> , Nils Johansson, Division of Fire Safety Engineering, Lund University, Sweden	<i>Effect of Firebrand Size and Geometry on Heating from a Smoldering Pile under Wind</i> , Zhenxiang Tao, Bryce Bathras, Byoungchul Kwon, Ben Biallas, Michael Gollner and Rui Yang, Department of Fire Protection Engineering, University of Maryland, College Park, USA	<i>Influence of Lit Emergency Signs and Illuminated Settings on Walking Speeds in Smoky Corridors</i> , Kosuke Fujii, Tomonori Sano and Yoshifumi Ohmiya, National Research Institute of Fire and Disaster, Japan
	10:25 - 10:50	<i>Experimental and Numerical Study of Pool Fire Dynamics in a Well-Confined Compartment Focusing on Pressure Variation</i> , Junyi Li, Tarek Beji and Bart Merci, Ghent University, Belgium	<i>Experimental Study on Flaming Ignition of Pine Needles by Simulated Lightning Discharge</i> , Hongming Zhang, Yiqian Qiao, Haixiang Chen, Naian Liu, Linhe Zhang and Xiaodong Xie, University of Science and Technology of China, China	<i>Evacuation Elevators in an Underground Metro Station: A Virtual Reality Evacuation Experiment</i> , Axel Mossberg, Daniel Nilsson and Jonathan Wahlqvist, Lund University/ Brandskyddslaget, Sweden
	10:50-11:25	Coffee Break Building Foyer		
Morning Session 2 11:25 - 12:40		COMPARTMENT FIRE- Room E7-3343 Session Chairs: TBD	MATERIAL BEHAVIOR IN FIRE - Room E7-3353 Session Chairs: TBD	RISK ANALYSIS - Room E5-2004 Session Chairs: TBD
	11:25 - 11:50	<i>Multi-Scale Analysis of Under-Ventilated Combustion Regime in Case of Fire Event in a Confined and Mechanically Ventilated Compartment</i> , Hugues Pretrel, Bouaza Lafdal and Sylvain Suard, IRSN, France	<i>Investigation of the Thermal Stability and Fire Behavior of High Performance Polymer: A Case Study of Polyimide</i> , Aditya Ramgobin, Serge Bourbigot and Gaelle Fontaine, University of Lille, France	<i>A Step Forward for Prevention of Unattended Cooking Using Multi-Step Machine Learning Algorithms</i> , Andy Wai-Cheong Tam and Anthony Hamins, NIST, USA
	11:50 - 12:15	<i>Semi-Empirical Model for Estimating the Heat Release Rate Required for Flashover in Compartments with Thermally-Thin Boundaries</i> , Mohamed Beshir, Yu Wang, Felipe Centeno, Rory Hadden, Stephen Welch and David Rush, The University of Edinburgh, UK	<i>On the Burning Behavior of Plastics at Large Scale: Uncartoned Unexpanded Plastic Commodity</i> , Gang Xiong, Dong Zeng, Alex Krisman and Yi Wang, FM Global, USA	<i>Effect of Sprinklers on the Patient's Survival Probability in Hospital Room Fires</i> , Simo Hostikka, Eetu Veikkanen, Tuula Hakkarainen, Tuula Kajolinna and Terhi Kling, Aalto University, Finland
	12:15 - 12:40	<i>A Full-Scale Experimental Study on Single Dwelling Burning Behavior of Informal Settlement</i> , Yu Wang, Mohamed Beshir, Antonio Cicone, Rory Hadden, Michal Krajcovic and David Rush, The University of Edinburgh, UK	<i>Fire Properties of Materials From Unsteady Burning</i> , Richard E. Lyon and Sean Crowley, Federal Aviation Administration, USA	<i>Estimation of Effective Coverage Rate of Fire Station Services Based on Real-Time Travel Times</i> , Dingli Liu, Zhiheng Xu, Yang Zhou and Chuangang Fan, School of Civil Engineering, Central South University, China
	12:40 - 13:45	Lunch - E5 - 3101, 3102		
Afternoon Session 1 13:45 - 15:00		COMPARTMENT FIRE- Room E7-3343 Session Chairs: TBD	MATERIAL BEHAVIOR IN FIRE - Room E7-3353 Session Chairs: TBD	RISK ANALYSIS - Room E5-2004 Session Chairs: TBD
	13:45 - 14:10	<i>Fire Dynamics in Mass Timber Compartments</i> , Carmen Gorska, Juan Patricio Hidalgo Medina and Jose Torero, The University of Queensland, Australia	<i>Passive Fire Protection of Wood Using Some Bio-Derived Fire Retardants</i> , Ananya Thomas, Khalid Moinuddin and Paul Joseph, Victoria University, Melbourne, Australia, Australia	<i>Fires in Waste: Challenges and Solutions from a Scandinavian Perspective</i> , Ragni Fjellgaard Mikalsen, Anders Lönnermark, Karin Glansberg, Margaret McNamee and Karolina Storesund, RISE Fire Research Norway, Norway
	14:10 - 14:35	<i>Wind Effects on Transition and Extension Characteristics of the External Flame Projecting from a Compartment with Opposing Openings</i> , Man Li, Zihao Gao and Jie Ji, University of Science and Technology of China, China	<i>Effect of Phosphorus on Soot Formation and Flame Retardancy in Fires</i> , Haiqing Guo, Richard Walters, Richard Lyon and Sean Crowley, Federal Aviation Administration, USA	<i>Assessing Fire Frequency and Structural Fire Behaviour of England Statistics According to BS PD 7974-7</i> , Martina Manes and David Rush, The University of Edinburgh, UK
	14:35 - 15:00	<i>Effects of Horizontal Projection's Vertical Location on the Characteristics of Externally Venting Flames</i> , Dionysios Kolaitis, Christos Kontis and Christoforos Tsihlias, National Technical University of Athens, Greece	<i>Influence of Heating Conditions and Initial Thickness on the Effectiveness of Thin Intumescent Coatings</i> , Andrea Lucherini, Juan P. Hidalgo, Jose L. Torero and Cristian Maluk, The University of Queensland, Australia	<i>Probabilistic Analysis of the Vulnerability of Fire Departments to Ignitions Following Megathrust Earthquakes in the Nankai Trough Subduction Zone, Japan</i> , Tomoaki Nishino, Kyoto University, Japan
	15:00- 15:30	Coffee Break Building Foyer		
IAFSS Meetings	15:30 - 17:00	IAFSS Membership Business Meeting (Room TBD)		
	17:30-19:30	IAFSS Management Committee Meeting (Meeting Room TBD)		
Evening Events	TBD	Emergency Response Experience @ Local Emergency Services Training Complex		

Thursday 30 April 2020

	8:00	Registration in Foyer Engineering 5 Building		
Morning Session 1 8:30 - 10:50	8:30 - 9:10	Invited Lecture # 4: <i>Evacuating First Nations during Wildfires in Canada</i> , Tara McGee, University of Alberta, Canada Session Chair: TBD		
		RISK ANALYSIS - Room E7-3343 Session Chairs: TBD	MATERIAL BEHAVIOR IN FIRE - Room E7-3353 Session Chairs: TBD	STRUCTURES IN FIRE - Room E5-2004 Session Chairs: TBD
	9:30 - 9:55	<i>Conceptual Framework for Quantifying Fire Resilience – A New Perspective on Fire Safety Performance of Non-Residential Buildings</i> , Keisuke Himoto, National Institute for Land and Infrastructure Management, Japan	<i>Flame extinction and burning behaviour of timber under varied oxygen concentrations</i> , Juan Cuevas, Jose Torero and Cristian Maluk, The University of Queensland, Australia	<i>Adequate Fire safety for Structural Steel Elements Based upon Life-Time Cost Optimization</i> , Danny Hopkin and Ruben Van Coile, OFR, UK
	9:55 - 10:25	<i>Developing a Framework for Fire Investigations in Informal Settlements</i> , Natalia Flores Quiroz, Richard Walls and Antonio Cicione, Stellenbosch University, South Africa	<i>Time Dependent Contribution of Char Oxidation and Flame Heat Feedback on the Mass Loss Rate of Timber</i> , David Morrisset, Rory M. Hadden, Alastair I. Bartlett, Angus Law and Richard Emberley, California Polytechnic State University-San Luis Obispo, USA	<i>The Role of Transfer Beams on the Global Structural Fire Response of Tall Steel Tramed Buildings</i> , Panagiotis Kotsovinos, Egle Rackauskaite and Susan Deeny, Arup, UK
	10:25 - 10:50	<i>Comparison of Component Categorizations used in International Total Cost of Fire Estimates</i> , Cecilia Lam and Amanda Robbins, National Research Council Canada, Canada	<i>Understanding Fire Growth for Performance Based Design of Bamboo Structures</i> , Angela Solarte, Janal Numapo, Tam Do, Aaron Bolanos, Juan Hidalgo and Jose L. Torero, The University of Queensland, Australia	<i>Analysis and Simulation on Fracture of Structural Steel at Elevated Temperatures Based on Extended Finite Element Method</i> , Wenyu Cai, Jian Jiang and Guo-Qiang Li, Tongji University, China
	10:50-11:25	Coffee Break Building Foyer		
Morning Session 2 11:25 - 12:40		FIRE DYNAMICS - Room E7-3343 Session Chairs: TBD	MATERIAL BEHAVIOR IN FIRE - Room E7-3353 Session Chairs: TBD	STRUCTURES IN FIRE - Room E5-2004 Session Chairs: TBD
	11:25 - 11:50	<i>Investigation of Sidewall Height Effect on the Burning Rate and Flame Tilt Characteristics of Pool Fire in Cross Wind</i> , Xiao Chen, Zhiwei Ding and Shouxiang Lu, University of Science and Technology of China, China	<i>Effect of Reduced Ambient Pressures and Opposed Airflows on the Flame Spread and Dripping of LDPE Insulated Copper Wires</i> , Lauren Gagnon, Carlos Fernandez-Pello, James Urban, Van Carey, Yusuke Konno and Osamu Fujita, University of California, Berkeley, USA	<i>Post-Fire Modeling of Aluminum Structures using a Kinetic Driven Approach</i> , Christian Rippe and Brian Lattimer, Jensen Hughes, USA
	11:50 - 12:15	<i>Experimental Investigation on Lateral Ceiling Temperature Distribution Induced by Wall Fire with Various Burner Aspect Ratios in Underground Space</i> , Fei Tang, Peng Hu and Jennifer Wen, The University of Warwick, UK	<i>Lower Pressure Dripping Limits of Inclined Polyethylene-Insulated Wires During Flame Spreading under Different Oxygen Concentrations</i> , Yue Zhang, Jun Fang, Jingwu Wang, Yongming Zhang and Lei Song, University of Science and Technology of China, China	<i>Full-Scale External Fire Test of Free-Standing Steel Silo</i> , Pawel Roszkowski and Grzegorz Kimbar, Fire Research Department, Instytut Techniki Budowlanej (ITB), Poland
	12:15 - 12:40	<i>Experimental Study on Vertical Temperature Distribution of Symmetry Axis of Two Identical Rectangular Pool Fires with Long Sides Parallel</i> , Huaxian Wan, Longxing Yu and Jie Ji, University of Science and Technology of China, China	<i>Evaluation of Flammability and Smoke Corrosivity of Data/Power Cables Used in Data Centers</i> , Dong Zeng, Paul Pocheng Su, Rajni Madan and Yi Wang, FM Global, USA	<i>Influence of Ply Configuration and Adhesive Type on Cross-Laminated Timber in Flexure at Elevated Temperatures</i> , Felix Wiesner, Susan Deeny and Luke Bisby, The University of Edinburgh, UK
	12:40 – 13:45	Lunch - E5 - 3101, 3102		
	13:45 - 15:30	Poster Session II and Coffee Break Engineering 7 Event Space and Foyer		
Afternoon Session 15:30 - 16:45		TUNNEL FIRES - Room E7-3343 Session Chairs: TBD	MATERIAL BEHAVIOR IN FIRE - Room E7-3353 Session Chairs: TBD	STRUCTURES IN FIRE - Room E5-2004 Session Chairs: TBD
	15:30 – 15:55	<i>Numerical Investigation on the Effect of Ambient Pressure on Mechanical Smoke Extraction Efficiency in Tunnel Fires</i> , Tiantian Tan, Longxing Yu, Long Ding, Zihao Gao and Jie Ji, University of Science and Technology of China, China	<i>PV Modules on Buildings – Outlines of PV Roofs' Fire Behavior Assessment</i> , Piergiacomo Cancelliere, Giovanni Manzini and Giombattista Traina, Ministry of Interior, Italian National Fire Service, CNVVF- Rome, Italy	<i>An Insight into EC4 Calculation Rules for Thermal Behaviour of Composite Slabs</i> , Jian Jiang, Wenyu Cai, Wei Chen, Jihong Ye and Guo-Qiang Li, China University of Mining and Technology, China
	15:55 - 16:20	<i>A Simple Model for Predicting the Smoke Spread Length During a Fire in a Shallow Urban Road Tunnel with Roof Openings Under Natural Ventilation</i> , Futoshi Tanaka, Kazuhiro Yoshida, Keisuke Ueda and Jie Ji, University of Fukui, Japan	<i>Flammability Trends for a Comprehensive Array of Cladding Materials</i> , Martyn McLaggan, Juan Hidalgo, Jeronimo Carrascal Tirado, Michael Heitzmann, Andres Osorio and Jose Torero, The University of Queensland, Australia	<i>Symmetric Modeling of the Thermal Actions in a Structural Fire Experiment on a Long-Span Composite Floor Beam</i> , Chao Zhang, Qi Li and Lisa Choe, National Institute of Standards and Technology, USA
16:20 - 16:45	<i>Mass Flow Rate through a Horizontal Opening at Small Pressure Differences</i> , Kazunori Harada and Daisaku Nii, Kyoto University, Japan	<i>Propensity to Self-Heating Ignition of Non-Operating Pouch 1 Lithium-Ion Battery Pack on a Hot Boundary</i> , Yanhui Liu, Peiyi Sun, Huichang Niu, Xinyan Huang and Guillermo Rein, The Hong Kong Polytechnic University, Hong Kong	<i>Experimental Study on the Fire Resistance of Unprotected Concrete-Filled Steel Tubular Columns under Multi Loading</i> , Yusuke Shintani, Toshihiko Nishimura, Tomohito Okazaki, Takuya Kinoshita, Hidetoshi Ito and Richard Liew, Takenaka Corporation, Japan	
Evening Events	18:00- 18:45	IAFSS Awards		
	18:45-22:00	Symposium Banquet Main Hall, Federation Hall, University of Waterloo		

Friday 1 May 2020

	8:00	Registration in Foyer Engineering 5 Building		
Morning Session 1 9:00 - 10:50	8:30 - 9:10	Invited Lecture # 5: Progress on Research of Fire Behavior and Fire Protection of Lithium Ion Battery , Jinhua Sun, University of Science and Technology of China, China Session Chair: TBD		
		FIRE DYNAMICS - Room E7-3343 Session Chairs: TBD	MATERIAL BEHAVIOR IN FIRE - Room E7-3353 Session Chairs: TBD	TUNNEL FIRES - Room E5-2004 Session Chairs: TBD
	9:30 - 9:55	Near-Limit Fire Spread in Opposed Flow , Xinyan Huang, Hong Kong Polytechnic University, China (<i>Proulx Early Career Award Lecture</i>)	Effects of Material Thickness on Ignition Times and Creeping Flame Spread in the Thermal Regime , Michael Delichatsios, Northeastern University, USA	Estimating Water Density for Tunnel Fixed Firefighting System and Ventilation Requirements to Control Fires in Road Tunnels , Raymond Klein, Igor Maevski, Andre Calado and Jeffrey Bott, Jacobs Engineering Group, USA
	9:55 - 10:25	Experimental Study of Flame Spread Underneath Photovoltaic (PV) Modules , Jens Steemann Kristensen, Farah Binte Mohd Faudzi and Grunde Jomaas, School of Engineering, BRE Centre for Fire Safety Engineering, University of Edinburgh, UK	Transitional Flame-Spread and Fuel-Regression Behaviors under the Change of Concurrent Wind , Nan Zhu, Xinyan Huang and Longhua Hu, University of Science and Technology of China, China	Combustion Efficiency During Fires in Tunnels with Natural Ventilation by Vitiated Air Including Descending Smoke , Tasuku Ishikawa, Keita Kasumi, Futoshi Tanaka and Khalid Moinuddin, University of Fukui, Japan
	10:25 - 10:50	Forced Convection Fire Spread Along Wooden Dowel Array , Giovanni Di Cristina, Shijin Kozhumal, Albert Simeoni, Nicholas Skowronski, Ali Rangwala and Seong-Kyun Im, Korea University, Korea	Flammability Limits and Near-Limit Chemistry Controlled Flame Spread over Thermally Thin Paper under Sub-Atmospheric Pressure , Xuanze He, Jingwu Wang and Jun Fang, University of Science and Technology of China, China	Parametric Study of Design Fires for Tunnels with Water-Based Fire Suppression Systems , Ying Zhen Li and Haukur Ingason, RISE Research Institutes of Sweden, Sweden
	10:50-11:25	Coffee Break Building Foyer		
Morning Session 2 11:25 - 13:05		FIRE DYNAMICS - Room E7-3343 Session Chairs: TBD	FIRE RISK ANALYSIS & DESIGN - Room E5-2004 Session Chairs: TBD	STRUCTURES IN FIRE - Room E7-3353 Session Chairs: TBD
	11:25 - 11:50	Induced Fire Hazards by Gasoline Spills , Katsuhiko Okamoto, Masahiro Nakagawa, Toshikazu Ichikawa, Takao Hagiwara and Masakatsu Honma, National Research Institute of Police Science, Japan	Spatial Metrics from LiDAR Roof Mapping for Fire Spread Risk Assessment of Informal Settlements in Cape Town, South Africa , Lesley Gibson, Adedayo Adeleke, Rory Hadden and David Rush, The University of Edinburgh, UK	Considerations on Computational Modeling of Concrete Structures in Fire , Shuna Ni and Thomas Gernay, Johns Hopkins University, USA
	11:50 - 12:15	A Preliminary Investigation to Develop a Semi-Probabilistic Model of Informal Settlement Fire Spread using B-RISK , Antonio Cicione, Colleen Wade, Michael Spearpoint, Lesley Gibson, Richard Walls and David Rush, University of Stellenbosch South Africa	Fire Impact Tool - Measuring the Impact of Fire Suppression Operations on the Environment , Francine Amon, Jonatan Gehandler, Robert McNamee, Margaret McNamee and Azra Vilic, RISE Research Institutes of Sweden, Sweden	Fire Behaviour of Fibre Reinforced Concrete used in Tunnel Applications , Cristian Maluk, Jason Tignard, Andrew Ridout, Todd Clarke and Ralf Winterberg, The University of Queensland, Australia
	12:15 - 12:40	Time-Independent Characteristics of Flowing Propane/Air Mixture Ignited by a Heated Surface , Tomohiko Imamura, Kosuke Uehara, Keita Nakata, Shoya Maruyama and Kazunori Kuwana, Suwa University of Science, Japan	A Method for Improved Realism in Modeling Transient Fires in Nuclear Power Plant Probabilistic Risk Assessments , Jason Floyd, Marko Randelovic and Ashley Lindeman, Jensen Hughes, USA	Stress-Strain-Temperature Relationship for Concrete , Quang X. Le, Jose L. Torero and Vinh T.N. Dao, The University of Queensland; The University of Danang - University of Science and Technology, Australia
	12.40 - 13.05	Experimental Investigation on Maximum Ceiling Jet Temperature Generated by a Vertically Spreading Cable Fire , Xianjia Huang, Yuhong Wang, Zhaoying Ren, Anthony Cheng and W.K. Chow, Institute of Industry Technology Guangzhou & Chinese Academy of Sciences, China	Probabilistic Design Fires for Multiple Passenger Vehicle Scenarios , Mohd Zahirasri Mohd Tohir, Michael Spearpoint and Charles Fleischmann, Universiti Putra Malaysia, Malaysia	An Experimental Study of the Behavior of 3D Printed Concrete at Elevated Temperatures , Antonio Cicione, Jacques Kruger, Richard Walls and Gideon Van Zijl, Stellenbosch University, South Africa
	13:05 – 14:10	Lunch - E5 - 3101, 3102		
Afternoon Session	14:10- 14:30	Symposium Closing Ceremony		